

## PATENT COOPERATION TREATY

## PCT

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

|   |   |   |
|---|---|---|
| Applicant's or agent's file reference<br>15907/PCT-/Vu                                    | <b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416) |   |
| International application No.<br>PCT/EP2003/009228  | International filing date (day/month/year)<br>20 August 2003 (20.08.2003)   | Priority date (day/month/year)<br>21 August 2002 (21.08.2002) |
| International Patent Classification (IPC) or national classification and IPC<br>A61N 1/30 |   |   |
| Applicant<br>VIASYS HEALTHCARE GMBH   |   |   |

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 5 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 2 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

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|--|---|
| Date of submission of the demand<br>22 March 2004 (22.03.2004) | Date of completion of this report<br>17 September 2004 (17.09.2004) |
| Name and mailing address of the IPEA/EP                        | Authorized officer  |
| Facsimile No.  | Telephone No.   |

Translation

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/EP2003/009228

## I. Basis of the report

### 1. With regard to the elements of the international application:\*

- ☐ the international application as originally filed
- ☒ the description:  
 pages \_\_\_\_\_ 1-8 \_\_\_\_\_, as originally filed  
 pages \_\_\_\_\_, filed with the demand  
 pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☒ the claims:  
 pages \_\_\_\_\_, as originally filed  
 pages \_\_\_\_\_, as amended (together with any statement under Article 19  
 pages \_\_\_\_\_, filed with the demand  
 pages \_\_\_\_\_ 1-11 \_\_\_\_\_, filed with the letter of 25 August 2004 (25.08.2004)
- ☒ the drawings:  
 pages \_\_\_\_\_ 1/1 \_\_\_\_\_, as originally filed  
 pages \_\_\_\_\_, filed with the demand  
 pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☐ the sequence listing part of the description:  
 pages \_\_\_\_\_, as originally filed  
 pages \_\_\_\_\_, filed with the demand  
 pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

### 2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item. These elements were available or furnished to this Authority in the following language \_\_\_\_\_ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

### 3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

### 4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheets/fig \_\_\_\_\_

### 5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\*

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International Application No.

PCT/EP 03/09228

## V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

## 1. Statement

|                               |        |      |     |
|-------------------------------|--------|------|-----|
| Novelty (N)                   | Claims | 1-11 | YES |
|                               | Claims |      | NO  |
| Inventive step (IS)           | Claims | 1-11 | YES |
|                               | Claims |      | NO  |
| Industrial applicability (IA) | Claims | 1-11 | YES |
|                               | Claims |      | NO  |

## 2. Citations and explanations

## 1. Reference is made to the following document:

D1: EP-A-0 571 712 (ADVANCE KK) 1 December 1993  
(1993-12-01)

## 2. Document D1 is considered the prior art closest to the subject matter of claim 1. It discloses (the references in parentheses are to D1):

an array of measuring electrodes for electro-impedance tomography with at least one electrode (electrode 3, figure 1) for electrically contacting an object, characterized in that a storage space (space 7, figure 1) is provided on the side of the electrode facing away from said object, said space containing a contacting agent for reducing the electrical contact resistance between the electrode and the object, the electrode being permeable to said contacting agent (abstract).

The subject matter of claim 1 thus differs from the known document D1 in that the electrode according to D1 is well-suited for iontophoresis, whereas the electrode according to claim 1 is well-suited for electro-impedance tomography.

The electrode according to claim 1 is furthermore characterized in that the ions can diffuse through the measuring electrode, while the measuring electrode is impermeable to the fluid used as a solvent.

Therefore, the subject matter of claim 1 is novel (PCT Article 33(2)).

3. The problem to be solved by the present invention can thus be seen as that of producing an array of measuring electrodes that is well-suited for electro-impedance tomography and that permits the best possible electrical contacting of the measurement object. The electrode array offers the additional advantage that its design makes it impossible for an excessive amount of contact fluid to be discharged from the storage container.

The solution to this problem as proposed in claim 1 of the present application involves an inventive step (PCT Article 33(3)) for the following reasons: the measuring electrode forms a semi-permeable membrane that is permeable only to the ions dissolved in the contact fluid, the contact fluid itself being retained.

4. The same applies *mutatis mutandis* to claim 11, which is thus also novel and inventive.
5. Claims 2-10 are dependent upon claim 1 and thus likewise satisfy the PCT requirements for novelty and inventive step.